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10/705,315

11/10/2003

Sachin Doshi

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01/17/2006

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH  
1600 TCF TOWER  
121 SOUTH EIGHT STREET  
MINNEAPOLIS, MN 55402

EXAMINER

CASIANO, ANGEL L

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                              |  |
|------------------------------|-------------------------------|------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/705,315 | Applicant(s)<br>DOSHI ET AL. |  |
|                              | Examiner<br>Angel L. Casiano  | Art Unit<br>2182             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

*Response to Amendment*

The present Office action is in response to communication dated 14 October 2005.

Claims 1-32 are pending. All claims have been examined as amended.

*Drawings*

1. Previous Objections to the Drawings have been overcome in view of the Amendment submitted 14 October 2005.

*Specification*

2. The new title submitted has been accepted and acknowledged in the record. The new title is: "DATA FLOW MANAGEMENT APPARATUS, SYSTEMS, AND METHODS".

*Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, this is unclear. The language is directed to controlling a data flow. While the Applicant argues that the limitation "after exceeding a guaranteed minimum amount of the resource" is directed to the determination of the average value (see Page 11 of the Remarks), the language supports an interpretation that control of the data flow occurs after exceeding the

Art Unit: 2182

guaranteed amount of the resource. For purposes of examination, the limitation “after exceeding a guaranteed minimum amount of the resource” is interpreted as directed to the determination of the average (as in Page 11 of the Remarks). Independent claims 11, 19, 25, and 28 also contain the limitation directed to controlling the data flow. Therefore, these claims are also rejected under the same basis.

Claims 2-10, 12-18, 20-24, 26-27, and 29-32 depend upon claims 1, 11, 19, 25 or 28 and are therefore rejected under the same basis.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-6, 11-13, 17-23, 28, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al. [US 2003/0225905 A1] in view of Sato [US 6,009,078].

Regarding claim 1, Scifres et al. teaches controlling a data flow (see Abstract, “flow allocation”) associated with at least one of a selected number of ports (see Abstract, “usage devices”; Figure 1; Figure 3 and Page 4, [0039]) having a first actual usage value (see [0049], “computing the flow volume for each usage device”) above a determined average shared resource usage value (see [0049], “usage devices having flows exceeding the volume limit”) associated with the selected number of ports sharing a resource. The reference also teaches “controlling” this flow after exceeding a guaranteed minimum amount of the resource. In particular, “processing agent 22” disclosed in Figure 1, explicitly teaches that if the “flow volume 32” is greater than “volume limit 34”, then this is restricted.

However, the Scifres et al. reference fails to teach the determined average shared resource value as associated with the selected number of ports sharing a resource after exceeding a guaranteed minimum amount of the resource. As for this limitation, Sato teaches a plurality of ports having a “minimum guaranteed value” (see Abstract). A resource usage value is determined as associated with the ports exceeding the guaranteed minimum amount (see Abstract, “total queue monitoring”, “counted up *only* when the counts of the port buffers *exceed* the minimum guaranteed values”, emphasis added). Accordingly, at the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures in order to obtain traffic congestion control, referencing not only to a maximum guaranteed

amount, but to also to a minimum guaranteed amount, as taught by Sato (see col. 19, lines 10-14).

As for claim 2, Scifres et al. explicitly teaches determining an average shared resource usage value (see [0049], “Equation 3”).

As for claim 3, Scifres et al. teaches a data flow being associated with a restricted flow usage level, which is below the maximum flow usage level (See Page 8, claim 1 and [0048]). Therefore, the control step is removed once a portion of the flow rate is allocated according to the selected restriction rules (see [0048]).

As for claim 4, Scifres et al. teaches selecting the selected number of ports by locating at least one port included in a plurality of ports using an amount of the resource greater than a guaranteed minimum amount (see Page 5, [0049], “identifying the subset of usage devices”); determining a cumulative shared usage value based on the selected number of ports; and determining the determined average shared resource usage value by dividing the cumulative shared usage value by the selected number of ports (see Page 5, [0049], “Equation 3”).

As for claim 5, Scifres et al. teaches providing the users based on their associated rates (see [0012], “the usage limit is selected from sets of volume limit and rate limit”).

As for claim 6, Scifres et al. teaches repeatedly performing the determination of the usage value (see Page 8, claims 1 and 4-5, “repeating said computing, comparing, identifying, and associating steps”).

Regarding claim 11, the combination of references teaches a method for controlling a data flow (see Scifres et al.; Abstract, “flow allocation”) associated with at least one of a selected number of ports (see Id.; Abstract, “usage devices”; Figure 1). Accordingly, the combination also teaches an article comprising a machine-accessible medium having associated data, wherein the data, when accessed, results in a machine performing these steps. Therefore, the present claim is rejected under the same rationale.

As for claims 12-13 and 17-18, the combination also teaches an article comprising a machine-accessible medium having associated data, wherein the data, when accessed, results in a machine performing these steps. Therefore, the present claims are rejected under the same rationale.

Regarding claim 19, the combination of references teaches a method for controlling a data flow (see Scifres et al.; Abstract, “flow allocation”) associated with at least one of a selected number of ports (see Id.; Abstract, “usage devices”; Figure 1). Accordingly, the combination also teaches the apparatus for implementing the cited method. Therefore, the present claim is rejected under the same rationale.

As for claims 20-22, the combination also teaches the apparatus for implementing the method. Therefore, the present claims are rejected under the same rationale.

As for claim 23, Scifres et al. teaches a network processor (see [0042], “22”).

Regarding claim 28, the combination of references teaches a method for controlling a data flow (see Scifres et al.; Abstract, “flow allocation”) associated with at least one of a selected number of ports (Id.; Abstract, “usage devices”; Figure 1). Accordingly, the combination also teaches the system for implementing the cited method. Therefore, the present claim is rejected under the same rationale.

As for claim 32, the Scifres et al. reference teaches a communications medium coupled to the apparatus (see Figure 1).

8. Claims 7-10, 14-16, 25-27, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al. [US 2003/0225905 A1] in view of Sato [US 6,009,078], in further view of Ruutu et al. [US 2003/0123392 A1].

As for claims 7 and 8, the combination of Scifres et al. and Sato teaches controlling a data flow (see Scifres et al.; Abstract, “flow allocation”) associated with at least one of a selected number of ports (Id.; Abstract, “usage devices”; Figure 1). The combination also teaches “repeatedly” performing the “computing, comparing, identifying, and associating steps” (see Scifres et al.; Page 8, claim 5).



However, the combination of references does not specify a dynamic threshold value or setting this value as a sum of the determined average shared resource usage value and a delta value. Regarding this limitation, Ruutu et al. teaches a dynamic sharing mechanism (see Abstract) and sets a nominal capacity to each data flow and additional capacity is shifted from a first flow to a second flow.

At the time of the invention, one of ordinary skill in the art would have been motivated to modify the cited combination of references in order to reduce the number of packet drops during congestion and to improve network performance, as taught by Ruutu et al.

As for claim 9, the combination of references teaches determining a value according to speed (see Scifres et al.; Page 5, [0049], “rate”) and overall usage value (see “usage pattern”). However, this combination does not specify a delta value. Ruutu et al. teaches setting a nominal capacity to each data flow and shifting an additional capacity from a first flow to a second flow when its nominal capacity has been exceeded. This implements a dynamic buffer-sharing mechanism (see Abstract).

At the time of the invention, one of ordinary skill in the art would have been motivated to modify the previous combination of references for the reasons stated above.

As for claim 10, the combination of Scifres et al. and Sato does not teach the resource as comprising a memory. Ruutu et al. teaches a buffer (memory) sharing mechanism (see Abstract). At the time of the invention, one of ordinary skill in the art would have been motivated to modify the previous combination of references for the reasons stated above.

As for claims 14-16, the combination of references also teaches an article comprising a machine-accessible medium having associated data, wherein the data, when accessed, results in a machine performing these steps. Therefore, the present claims are rejected under the same rationale.

Regarding claim 25, the combination of Scifres et al. and Sato teaches controlling a data flow (see Abstract, “flow allocation”) associated with at least one of a selected number of ports (see Abstract, “usage devices”; Figure 1). Accordingly, the combination also teaches the apparatus for implementing this method.

However, this combination does not teach the resource as comprising a memory (having a transmit queue storage) and a plurality of ports coupled to it. Ruutu et al. teaches a buffer (memory) sharing mechanism (see Abstract).

At the time of the invention, one of ordinary skill in the art would have been motivated to modify the previous combination of references for the reasons stated above.

As for claims 26-27, the combination of references also teaches the apparatus for implementing the method. Therefore, the present claims are rejected under the same rationale.

As for claims 30-31, the combination of references also teaches the system for implementing the method. Therefore, the present claims are rejected under the same rationale.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al. [US 2003/0225905 A1] in view of Sato [US 6,009,078], in further view of Liang [US 5,933,427 A].

As for claim 24, the Scifres et al. and Sato combination does not explicitly teach a Layer 2 Ethernet switch. However, Liang teaches a Layer 2 Ethernet switch (see col. 2, lines 9-10). At the time of the invention, one of ordinary skill in the art would have been motivated to modify the cited combination of disclosures in order to implement a common switch for an Ethernet LAN, as taught by Liang.

10. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al. [US 2003/0225905 A1] in view of Sato [US 6,009,078], in further view of Roberts [US 6104712 A].

As for claim 29, the Scifres et al. and Sato combination does not teach an omni directional antenna to receive information included in the data flow. Regarding this limitation, Roberts teaches data flow received using omni directional antennas (see Figure 2). At the time of the invention, one of ordinary skill in the art would have been motivated to modify the Scifres et al. and Sato combination in order to implement wireless networks, as taught by Roberts.

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. **Uedo** [US 20030064681 A1] teaches wireless communication system performing flow control of the wireless bandwidth.
- b. **Berg et al.** [US 20030131043 A1] teaches: “Resources within a component such as a memory system are often allocated by that component itself, which requires adding communication paths between the components operating in a system to arbitrate for resources and the control of the flow of data so that data transmissions through the system do not exceed the amount of resources available at any time” (emphasis added).
- c. **Kago** [US 6785238 B1] teaches “a controller for performing a **flow control** which **limits a specific data flow**, from the terminal portions, which has caused an output queue of the queue management portion to exceed a preset threshold value” (emphasis added).

13. **Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2182

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel L. Casiano whose telephone number is 571-272-4142. The examiner can normally be reached on 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alc  
21 December 2005

  
KIM HUYNH  
SUPERVISORY PATENT EXAMINER

1/6/06